

3/4/2021

Database files developed by Anchor OEA (AQ) for the Green River inputs to the East Waterway Anthropogenic Background determination. Data has been compiled from multiple sources and cleaned for consistency between datasets. Data have been combined from raw source files with Python scripts. Quality control checks have been performed on these large and varied datasets, however, if there are any data issues, please contact gbrunthorst@anchoragea.com with any questions.

Data Files

The suspended solids database compilation consists of 3 files:

Final_dataset_2021-02-27.xlsx includes the concentrations for the final anthropogenic background dataset. Total PCBs Congeners, Dioxin/Furan TEQ, Arsenic, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, and 2,3,7,8-TCDF. Additional details provided in the column descriptions to the right.

GreenSuspendedSedSummary_2021-01-28.xlsx includes the concentrations for Total PCBs Congeners, Total PCBs Aroclors, Dioxin/Furan TEQ, and Arsenic, along with sample information (e.g., Green River Flow designation at the time of sampling). Additional details provided in the column descriptions to the right.

GreenSuspendedSedAll_2021-01-28.xlsx includes the concentrations for Total PCBs Congeners, Total PCBs Aroclors, Dioxin/Furan TEQ, and Arsenic, and PCB and Dioxin/Furan congeners. Note that PCB congener nomenclature is based on the source database and is not globally consistent. Additional details provided in the column descriptions to the right.

Represented studies

LDWG AOC3 Compilation of Existing Data and Data Evaluation Report (Compiled Suspended Solids)

<https://ndwg.org/projects/library/>

King County 2016 (Suspended Solids)

<https://green2.kingcounty.gov/science/library/Document.aspx?ArticleID=410>

USGS 2018 (Suspended Solids)

<https://pubs.usgs.gov/wir/2018/5133/wir20185133.pdf>

<https://pubs.usgs.gov/cv/cv9880/>

<https://pubs.er.usgs.gov/publication/ds973>

<https://pubs.er.usgs.gov/publication/ds1073>

Ecology Contaminant Loading to the Lower Duwamish Waterway from Suspended Sediment in the Green River (Suspended Solids)

<https://apps.ecology.wa.gov/gsp/DocViewer.aspx?dId=40580>

Data sources

EIM download for the following study IDs:

GNRRLD13

GNRRLD14

GNRRLD16

LDW_08

LDWG AOC3 database found on LDWG.org. Tables:

Upstream Solids

USGS field data pull from station 12113390

USGS_data_pull_12113390_All.xlsx

Miscellaneous data were pulled from PDF source documents for studies (links below)

AQ Scripts in order of execution

\\fu\anchor\Projects\Port of Seattle\060003-01 East WW SRI_FS\PP ROD\Anthropogenic\AB Meeting 3 - Green\Scripts

ss_wrangle-01.ipynb

ss_wrangle-02.ipynb

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Acqa final_dataset.ipynb

Data File Column Descriptions

Final_dataset_2021-02-27.xlsx

Column Name	Description
Research_Lead	Research entity that conducted the study
Sample_Name	Sample ID
Sampling_Method	Sampling method used
Chemical	Chemical
Value	Concentration. Total PCBs based on sum of detected congeners. For Dioxin/Furan TEQ, TEQ calculated based on the mammalian TEFs (Van den Berg et. al. 2006) using 1/2 the detection limit for NDs. Fines-normalized concentration for organics: Total PCBs Congeners, Dioxin/Furan TEQ, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, and 2,3,7,8-TCDF.
Unit	Concentration unit, dry weight base or fines-normalized.
Detected	Flag for detections. Total and TEQ would be non-detect ("No") if all summed constituents are ND (however, this does not occur in the dataset [at least one congener is always detected]).

GreenSuspendedSedSummary_2021-01-28.xlsx

Column Name	Description
Research_Lead	Research entity that conducted the study. Note KC and USGS samples collected at RM 10.4 and ECV samples collected at RM 6.8
Sample_Name	Sample ID
Matrix	Suspended solids
Sampling_Method	Sampling method used
Start_Date	Date and time at the start of sampling or field deployment. Values populated from reports if not present in the source database.
Sample_Date	Date and time of sample collection at the end of sampling
Sample_Duration_days	Duration of field deployment
Analysis_Method	Laboratory method
Chemical	Chemical
Value	Concentration. Total PCBs based on sum of detected congeners or Aroclors. If all Aroclors were non-detect, then the maximum of the detection limit was presented. For Dioxin/ furan TEQ, TEQ calculated based on the mammalian TEFs (Van den Berg et. al. 2006) using 1/2 the detection limit for NDs.
Qualifier	Validation or laboratory qualifier
Unit	Concentration unit, dry weight basis
Detected	Flag for detections. Totals are non-detect ("False") if all summed constituents are ND.
Coelution	PCB congener coelution flag as provided by the source database. Note that nomenclature for PCB congeners is different for different databases.
Fines	Percent fines for the sample
Fines_Unit	Percent (by volume or mass depending on the analysis)
Fines_source	Source of fines information, since fines data were sometimes only available in source documents
TOC	Total organic carbon for the sample
TOC_Unit	Percent
Data_Source	Source of the sample concentration data
HH_Flow_sam_ave_cfs	Average flow in cubic feet per second during sampling from below the Howard Hanson dam, data from USGS, station 12105900 GREEN RIVER BELOW HOWARD A HANSON DAM, WA
HH_Flow_Start_Date_cfs	Average flow in cubic feet per second on the start_date of sampling from below the Howard Hanson dam, data from USGS, station 12105900 GREEN RIVER BELOW HOWARD A HANSON DAM, WA
Precip_sam_ave_in_hr	Average precipitation in inches per hour during sampling from the King County Tukwila Rainfall Station (TUKW), data obtained from King County.
Precip_sam_12hr_ave_in_hr	Average precipitation in inches per hour during and 12 hours before sampling from the King County Tukwila Rainfall Station (TUKW), data obtained from King County. This is analogous to the King County (2016) method for quantifying rainfall for analysis.
Precip_antecedent_48hr_ave_in_hr	Average precipitation in inches per hour 48 hours before sampling from the King County Tukwila Rainfall Station (TUKW), data obtained from King County. This is analogous to the USGS (2018) method for quantifying rainfall for analysis.
DER_Event_Type	Event type categorization used in the LDWG Data Evaluation Report
KC_Sample_Desc	Additional information on King County data
KC_Condition	Additional information on King County data
KC_Notes	Additional information on King County data

GreenSuspendedSedAll_2021-01-28.xlsx

Column Name	Description
Task	Database task code
Research_Lead	Research entity that conducted the study. Note KC and USGS samples collected at RM 10.4 and ECV samples collected at RM 6.8
Location_Name	Database location code
Sample_Name	Sample ID
Matrix	Suspended solids
Sampling_Method	Sampling method used
KC_Sample_Desc	Additional information on King County data
Start_Date	Date and time at the start of sampling or field deployment. Values populated from reports if not present in the source database.
Sample_Date	Date and time of sample collection at the end of sampling
Sample_Duration_days	Duration of field deployment
Analysis_Method	Laboratory method
Chemical_Group	Chemical group
CAS_Number	Chemical CAS number
Chemical	Chemical
Fraction	Suspended sediment
Value	Concentration. Total PCBs based on sum of detected congeners or Aroclors. If all Aroclors were non-detect, then the maximum of the detection limit was presented. For Dioxin/ furan TEQ, TEQ calculated based on the mammalian TEFs (Van den Berg et. al. 2006) using 1/2 the detection limit for NDs.
Qualifier	Validation or laboratory qualifier
Unit	Concentration unit, dry weight basis
Detected	Flag for detections. Totals are non-detect ("False") if all summed constituents are ND.
Coelution	PCB congener boelution flag as provided by the source database. Note that nomenclature for PCB congeners is different for different databases.
Coelution	Flag for PCB congener. Note that the different datasets reported coelutions differently.
Fines	Percent fines for the sample
Fines_Unit	Percent (by volume or mass depending on the analysis)
Fines_source	Source of fines information, since fines data were sometimes only available in source documents
TOC	Total organic carbon for the sample
TOC_Unit	Percent
Data_Source	Source of the sample concentration data